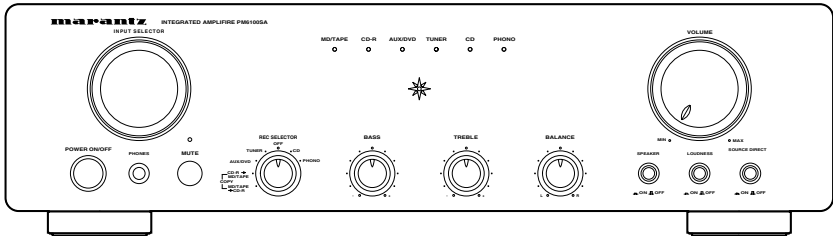


Service Manual

PM6100 /F1N, /K1G, /S1G

Integrated amplifier



PM6100SA

TABLE OF CONTENTS

SECTION	PAGE
1. TECHNICAL SPECIFICATIONS	1
2. BLOCK DIAGRAM	2
3. TEST EQUIPMENT REQUIRED FOR SERVICING	2
4. SCHEMATIC DIAGRAM AND PARTS LOCATION (Pattern Side)	3
5. EXPLODED VIEW AND PARTS LIST	12
6. IDLING CURRENT ALIGNMENT	18
7. ELECTRICAL PARTS LIST	19

Please use this service manual with referring to the user guide (D.F.U.) without fail.
修理の際は、必ず取扱説明書を準備し操作方法を確認の上作業を行ってください。

marantz®

PM6100SA

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Parts can be ordered either by mail or by Fax.. In both cases, the correct part number has to be specified.

The following information must be supplied to eliminate delays in processing your order :

1. Complete address
2. Complete part numbers and quantities required
3. Description of parts
4. Model number for which part is required
5. Way of shipment
6. Signature : any order form or Fax. must be signed, otherwise such part order will be considered as null and void.

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MARANTZ AMERICA, INC.
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ROSELLE, ILLINOIS 60172
USA
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FAX : 630 - 307 - 2687

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FAX : +31 - 40 - 2735578

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558 DARLING STREET,
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FAX : 61 - 2 - 9810 - 5355

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LENBROOK INDUSTRIES LIMITED
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FAX : 905 - 831 - 6936

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MT. WAVERLEY VIC 3149
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MRZ STANDARD CO.,LTD
746 - 754 MAHACHAI ROAD.,
WANGBURAPAPIROM, PHRANAKORN,
BANGKOK, 10200 THAILAND
PHONE : +66 - 2 - 222 9181
FAX : +66 - 2 - 224 6795

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NO.23, LORONG 8, TOA PAYOH
SINGAPORE 319257
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FAX : +65 2502213

NEW ZEALAND

WILDASH AUDIO SYSTEMS NZ
14 MALVERN ROAD MT ALBERT
AUCKLAND NEW ZEALAND
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TAIPEI, 10429, TAIWAN R.O.C.
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FAX : +886 - 2 - 25630415

MALAYSIA

WO KEE HONG ELECTRONICS SDN. BHD.
SUITE 8.1, LEVEL 8, MENARA GENESIS,
NO. 33, JALAN SULTAN ISMAIL,
50250 KUALA LUMPUR, MALAYSIA
PHONE : +60 3 - 2457677
FAX : +60 3 - 2458180

JAPAN *Technical*

MARANTZ JAPAN, INC.
35- 1, 7- CHOME, SAGAMIONO
SAGAMIHARA - SHI, KANAGAWA
JAPAN 228-8505
PHONE : +81 42 748 1013
FAX : +81 42 741 9190

日本マランツ株式会社

本 社 〒228-8505
神奈川県相模原市相模大野7-35-1
営業本部 〒150-0022
東京都渋谷区恵比寿南1-11-9

KOREA

MK ENTERPRISES LTD.
ROOM 604/605, ELECTRO-OFFICETEL, 16-58,
3GA, HANGANG-RO, YONGSAN-KU, SEOUL
KOREA
PHONE : +822 - 3232 - 155
FAX : +822 - 3232 - 154

SHOCK, FIRE HAZARD SERVICE TEST :

CAUTION : After servicing this appliance and prior to returning to customer, measure the resistance between either primary AC cord connector pins (with unit NOT connected to AC mains and its Power switch ON), and the face or Front Panel of product and controls and chassis bottom.

Any resistance measurement less than 1 Megohms should cause unit to be repaired or corrected before AC power is applied, and verified before it is return to the user/customer.

Ref. UL Standard No. 1492.

In case of difficulties, do not hesitate to contact the Technical
Department at above mentioned address.

1. TECHNICAL SPECIFICATIONS

Rated power output (20 Hz to 20 kHz, 2ch simultaneous drive)
50 W x 2 (8 Ω load)
60 W x 2 (6 Ω load)
70 W x 2 (4 Ω load)

Total harmonic distortion
(20 Hz to 20 kHz, 2ch drive, 8 Ω load) 0.01 %
Cross-modulation distortion (SMPTE) 0.01 %
Output bandwidth (8 Ω load, 0.04 %) 10 Hz to 50 kHz
Frequency response (CD, SOURCE DIRECT)
5 Hz to 60 kHz, +0 / -1 dB
Damping factor (8 Ω load, 20 Hz to 10 kHz) 100

Input sensitivity/Input impedance
PHONO (MM) 2.3 mV/47 kΩ
HIGH LEVEL 200 mV/15 kΩ

Maximum allowable PHONO input (1 kHz)
MM 130 mV

RIAA deviation (20 Hz to 20 kHz) ± 0.2 dB

S/N (IHF A network, input shorted)
PHONO (MM) 85 dB
HIGH LEVEL 110 dB

Loudness (-20 dB)
100 Hz 8 dB
10 kHz 3 dB

Tone control
BASS (100 Hz) ± 8 dB
TREBLE (10 kHz) ± 8 dB

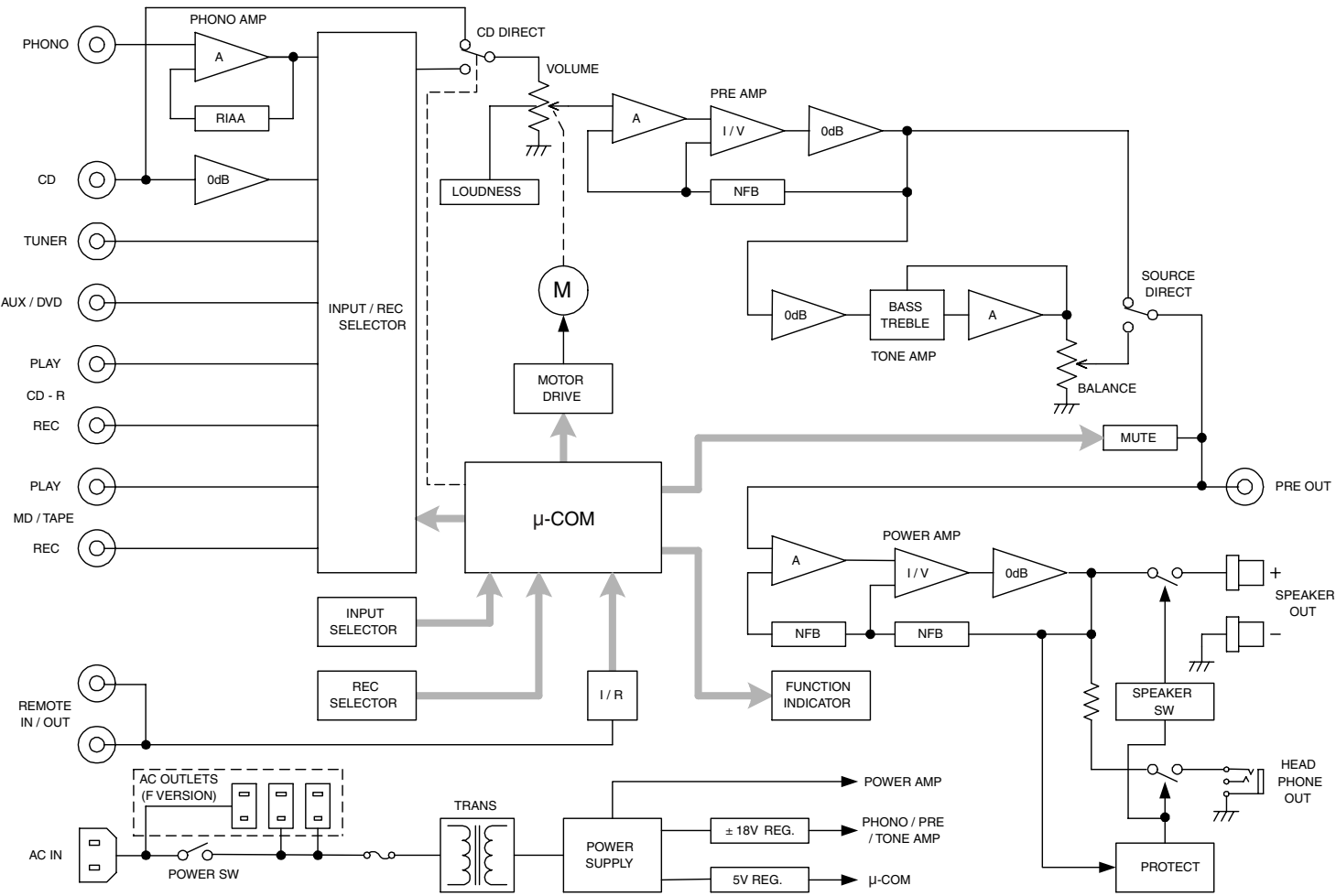
Supply voltage [/K] 110/220 V AC, 50/60 Hz
[/S] 230 V AC, 50 Hz
[/F] 100 V AC, 50/60 Hz
Power consumption [/K, /S] 155 W
[/F] 135 W

Dimensions
Width 440 mm
Height 124 mm
Depth 340 mm
Weight 7.5 kg

Accessories
Remote control unit (RC8100PM) x 1
Dimensions
Width 55 mm
Height 197 mm
Depth 21 mm
Weight (without batteries) 90 g
SUM-3 (AA size) dry cell battery x 2

Design and specifications are subject to change without notice.

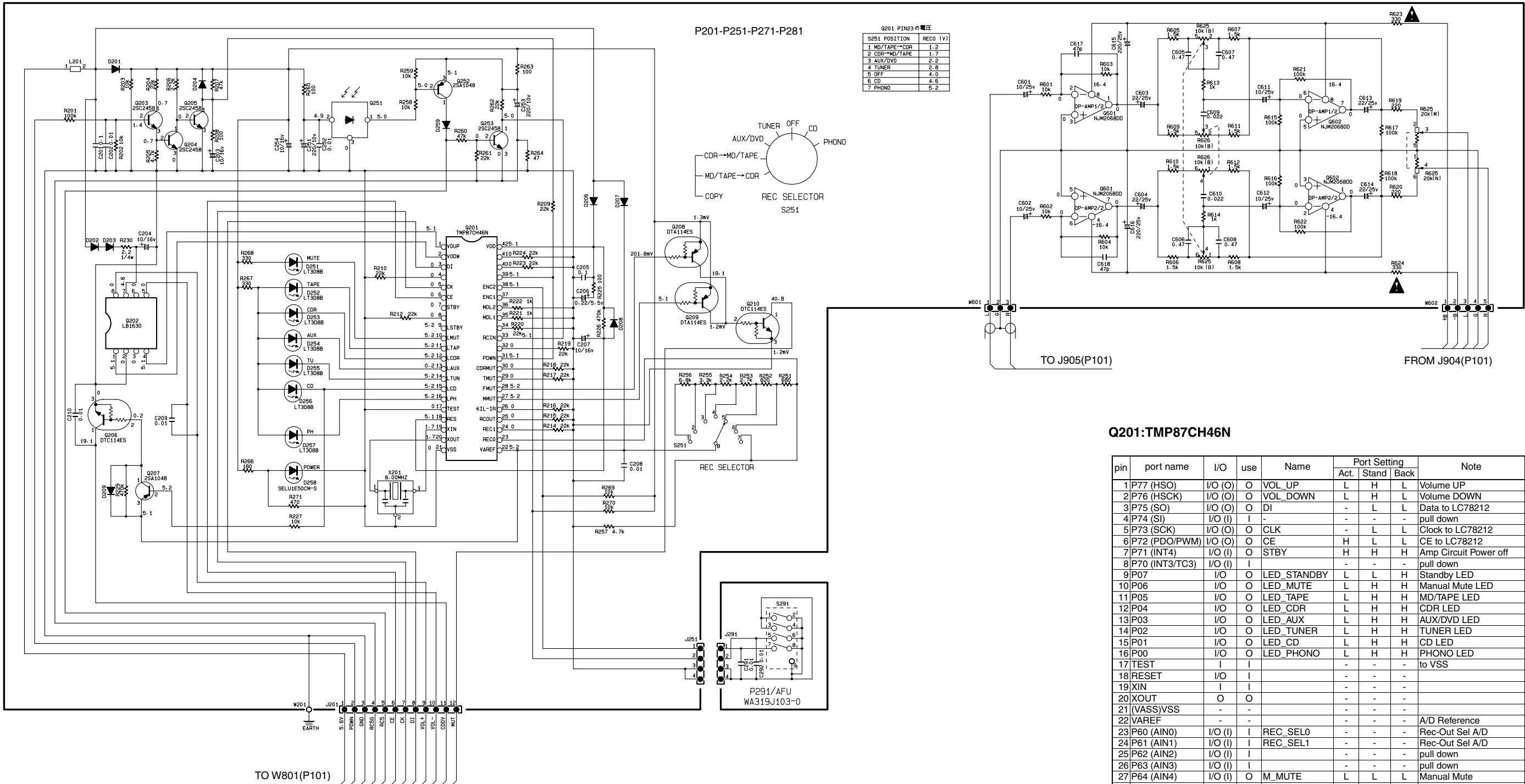
2. BLOCK DIAGRAM



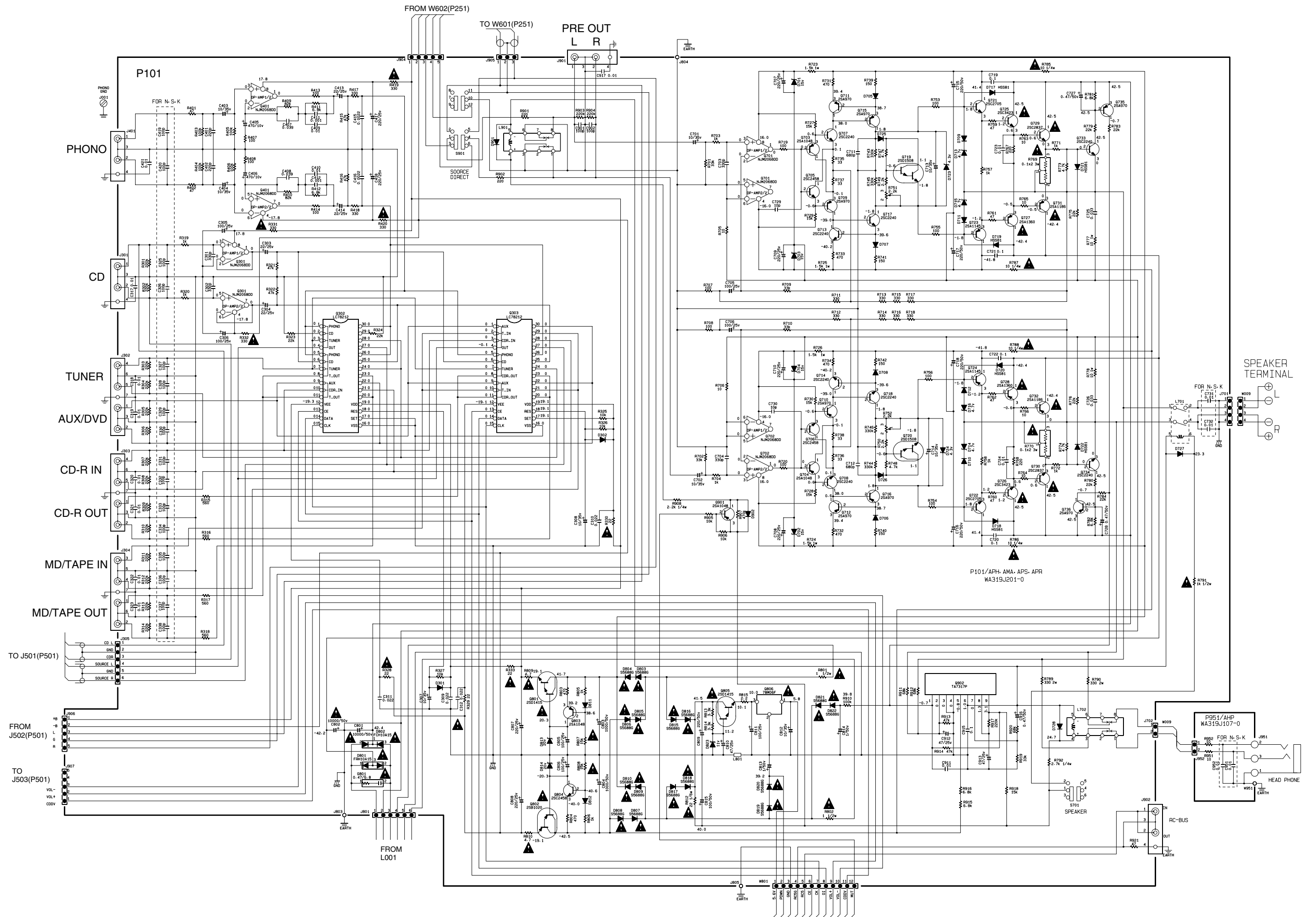
3. TEST EQUIPMENT REQUIRED FOR SERVICING

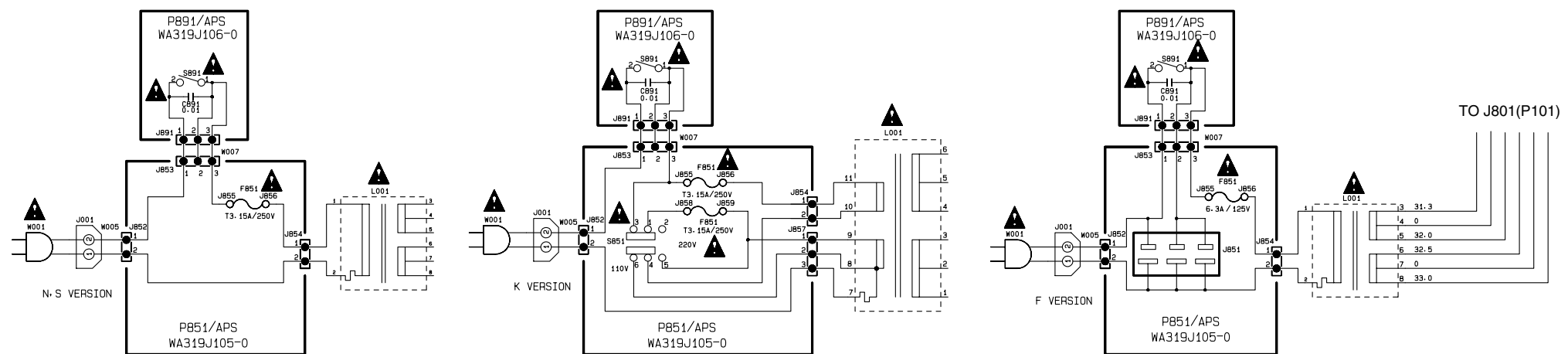
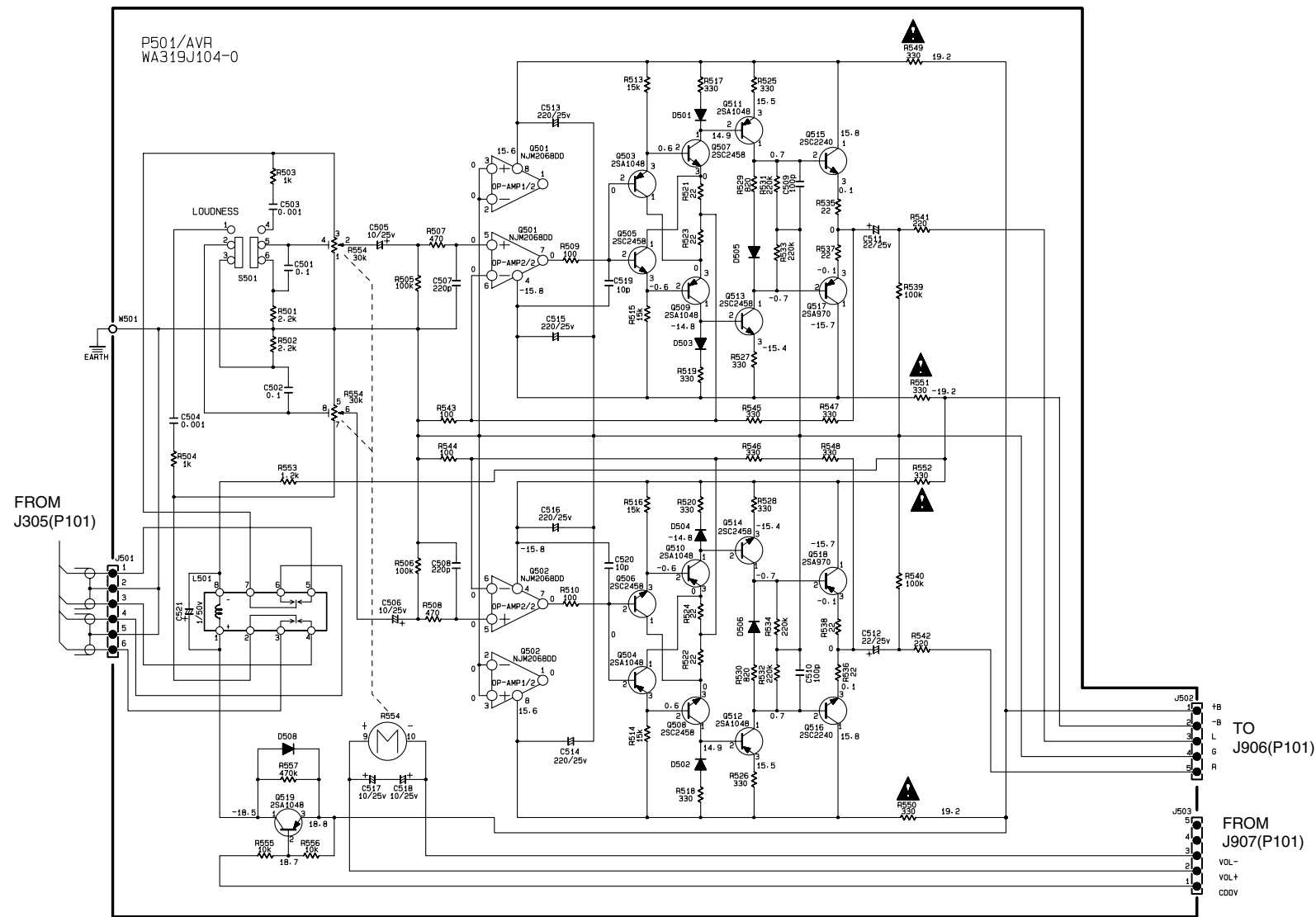
Item 項目	Use 使用 方法
Distortion Analyzer 歪率計	Distortion measurements 歪の測定
Audio Oscillator 低周波発振器	Sinewave and squarewave signal source 正弦波及び矩形波の信号源
AC VTVM AC VTVM	Voltage measurements (AC) 交流電圧の測定
Oscilloscope オシロスコープ	Waveform analysis and trouble shooting and ASO alignment 波計分析、トラブルシューティング及び ASO の調整
DC VTVM DC VTVM	Voltage measurements (DC) 直流電圧の測定
AC Wattmeter 交流ワットメーター	Monitors primary power to amplifier アンプの一次側消費電力のモニター
Line Voltmeter 電源電圧計	Monitors poterntial of primary power to amplifier アンプの一次側消費電圧のモニター
Vanable Autotransformer スライダック	Adjust level of primary power to amplifier アンプの一次側電圧の調節
Circuit Tester テスター	Trouble shooting トラブルシューティング
Shorting Plug ショート用プラグ	Shorts amplifier input to eliminate noise pickup 雑音を拾わないようにアンプ入力を短絡する

4. SCHEMATIC DIAGRAM AND PARTS LOCATION (Pattern Side)

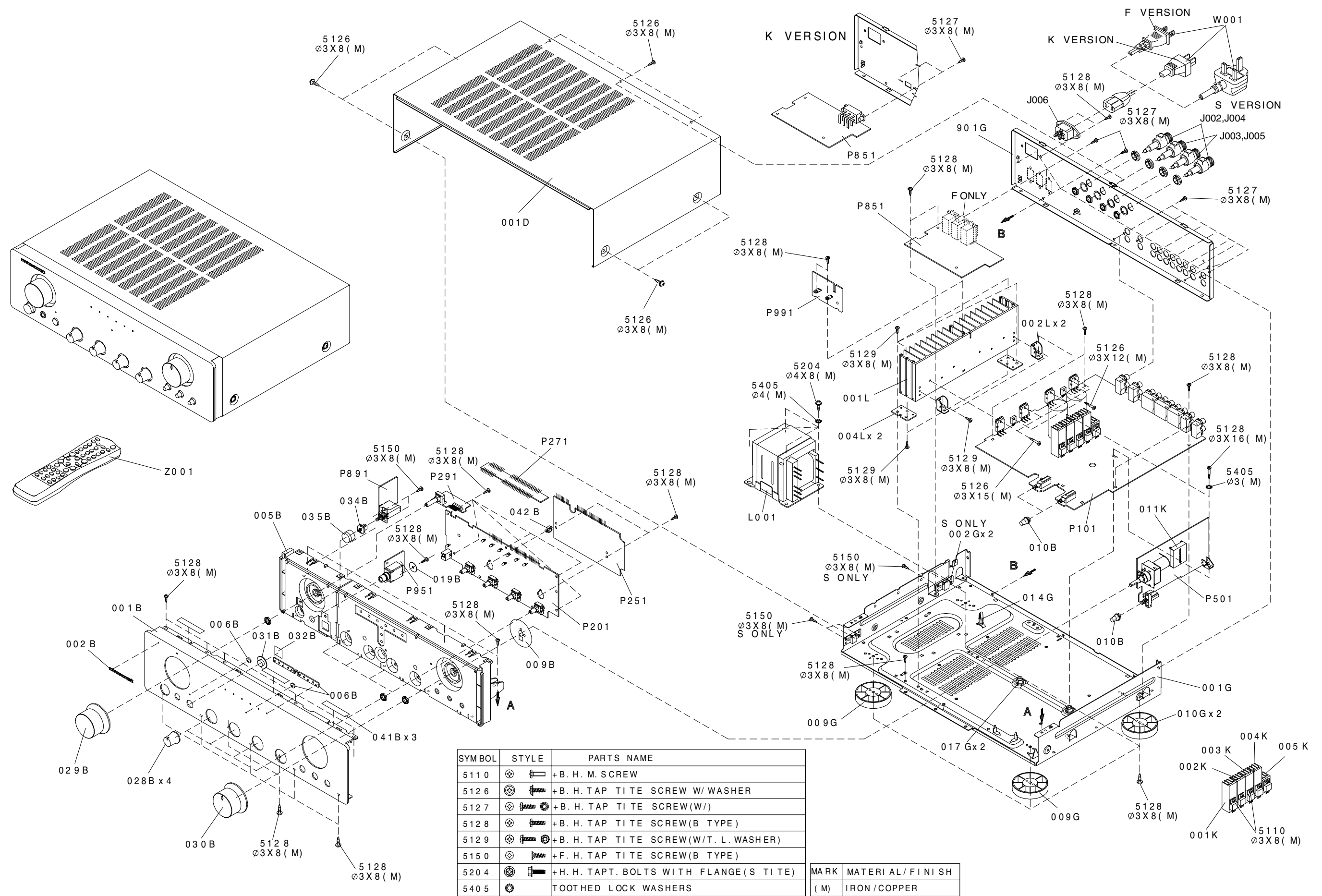


pin	port name	I/O	use	Name	Port Setting			Note
					Act.	Stand	Back	
1	P77 (HSO)	I/O (O)	O	VOL_UP	L	H	L	Volume UP
2	P76 (HSC)	I/O (O)	O	VOL_DOWN	L	H	L	Volume DOWN
3	P75 (SO)	I/O (O)	O	DI	-	-	L	Data to LC78212
4	P74 (SI)	I/O (I)	I	-	-	-	-	pull down
5	P73 (SCK)	I/O (O)	O	CLK	-	L	L	Clock to LC78212
6	P72 (PDO/PWM)	I/O (O)	O	CE	H	L	L	CE to LC78212
7	P71 (INT4)	I/O (I)	O	STBY	H	H	H	Amp Circuit Power off
8	P70 (INT3/TC3)	I/O (I)	I	-	-	-	-	pull down
9	P07	I/O	O	LED_STANDBY	L	L	H	Standby LED
10	P06	I/O	O	LED_MUTE	L	L	H	Manual Mute LED
11	P05	I/O	O	LED_TAPE	L	H	H	MD/TAPE LED
12	P04	I/O	O	LED_CDR	L	H	H	CDR LED
13	P03	I/O	O	LED_AUX	L	H	H	AUX/DVD LED
14	P02	I/O	O	LED_TUNER	L	H	H	TUNER LED
15	P01	I/O	O	LED_CD	L	H	H	CD LED
16	P00	I/O	O	LED_PHONO	L	H	H	PHONO LED
17	TEST	I	I	-	-	-	-	to VSS
18	RESET	I/O	I	-	-	-	-	
19	XIN	I	I	-	-	-	-	
20	XOUT	O	O	-	-	-	-	
21	(VASS)VSS	-	-	-	-	-	-	
22	VAREF	-	-	-	-	-	-	A/D Reference
23	P60 (AIN0)	I/O (I)	I	REC_SEL0	-	-	-	Rec-Out Sel A/D
24	P61 (AIN1)	I/O (I)	I	REC_SEL1	-	-	-	Rec-Out Sel A/D
25	P62 (AIN2)	I/O (I)	I	-	-	-	-	pull down
26	P63 (AIN3)	I/O (I)	I	-	-	-	-	pull down
27	P64 (AIN4)	I/O (I)	O	M_MUTE	L	L	L	Manual Mute
28	P65 (AIN5)	I/O (I)	O	INPUT_MUTE	L	L	L	Input Source Mute
29	P66 (AIN6)	I/O (I)	O	TAPE_MUTE	L	L	L	Tape Out Mute
30	P67 (AIN7)	I/O (I)	O	CDR_MUTE	L	L	L	CDR Out Mute
31	P10 (INT0)	I/O (I)	I	POWER_DOWN	L	-	-	Detect Power Down
32	P11 (INT1)	I/O (I)	I	-	-	-	-	pull down
33	P12 (INT2/TC1)	I/O (I)	I	RC5_IN	-	-	-	RC-5 Input
34	P13 (DVO)	I/O (O)	I	-	-	-	-	pull down
35	P14 (PPG)	I/O (O)	I	MODEL1	-	-	-	Model Check
36	P15 (TC2)	I/O (I)	I	MODEL2	-	-	-	Model Check
37	P16	I/O	I	ENC1	-	-	-	Input Sel. Rotary enc.
38	P17	I/O	I	ENC2	-	-	-	Input Sel Rotary enc.
39	P20 (INT5/STOP)	I/O (I)	I	STOP	-	-	-	31Pin short
40	P21 (XTIN)	I/O (I)	I	-	-	-	-	pull down
41	P22 (XTOUT)	I/O (O)	I	-	-	-	-	pull down
42	VDD	-	-	-	-	-	-	





5. EXPLODED VIEW AND PARTS LIST



POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
001B	GOLD	482245911172	FRONT AL PANEL GOLD	319J248110
002B			BADGE MARANTZ	185J251010
005B	GOLD		CHASSIS FRONT MOLD GOLD	319J105120
006B			LENS LED	319J355010
009B			SHIELD	135J109010
			MASTER VOLUME SHEET	
010B	GOLD	996500001391	BUTTON FUNCTION GOLD	275W270020
019B			WASHER D16 T0.5	261J012010
028B	GOLD		KNOB TONE/REC GOLD	319J154110
029B	GOLD		KNOB INPUT SELE. GOLD	312J154020
030B	GOLD		KNOB MASTER GOLD	312J154120
031B	GOLD	996500001392	LENS IR GOLD	275W355110
032B	GOLD		MASK IR	312J303030
034B		996500001394	JOINT POWER	312J125010
035B	GOLD	996500001395	BUTTON POWER SW GOLD	255W270110
001D	GOLD		LID TOP COVER GOLD	319J257110
009G		482246242045	LEG FRONT SIDE	183J057010
010G		482246242048	LEG REAR SIDE	183J057110
J002	GOLD	482226511424	TERMINAL WBT-0745	YT01010360
			SPEAKER RED	
J003	GOLD	482226511425	TERMINAL WBT-0747	YT01010370
			SPEAKER WHT	
J004	GOLD	482226511424	TERMINAL WBT-0745	YT01010360
			SPEAKER RED	
J005	GOLD	482226511425	TERMINAL WBT-0747	YT01010370
			SPEAKER WHT	
J006		482226511399	JACK 2P AC INLET SOT-16C	YJ04002360
▲ L001	/F		MAINS TRANSF. FOR F	TS17653010
▲ L001	/K		MAINS TRANSF. FOR K	TS17653030
▲ L001	/S		MAINS TRANSF. FOR N	TS17653020
▲ W001	/F	482232111337	A.C MAINS CORD	ZC01802080
			MITI 125V 12A	
▲ W001	/K	996500001383	A.C MAINS CORD	ZC01803090
			CCEE 2.5A 250V	
▲ W001	/S		A.C MAINS CORD	ZC01804070
			FOR HK(S PORE) 250V 10A	
			PACKING	
001T	/F		USER GUIDE JAPAN	319J851110
001T	/K, /S		USER GUIDE	319J851350
Z001			REMOTE COMMANDER	ZK319J0010
			RC8100PM	
			NOT STANDARD SPARE PARTS	
001S			PACKING CASE	319J801010
002S			CUSHION	319J809010
J099	/K	482226510092	JACK AC ADAPTER, SMK S-I6116 (PLRTY)	YJ04001240

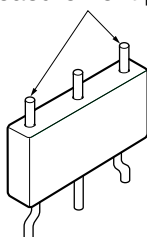
6. IDLING CURRENT ALIGNMENT

1. Each of cement resistor R769(on the PCB P101:Lch) and cement resistor R770(on the PCB P101:Rch) are provided with three test points. Connect the digital voltage meter, set for the DC voltage input, to the test points at the two extremities of three test points of R769(L ch) and R770(R ch).
2. After the setup above, turn the mains switch ON and heat up the amplifier about 10 minutes.
3. Adjust variable resistors R769(on the PCB P101:L ch) and R770(on the PCB P101:R ch) according to the digital volt meter reading. The target setting value is $10\text{mV} \pm 1\text{mV}$ (50mA) for both L ch and R ch.

アイドル電流調整

1. P101 基板上のセメント抵抗 R769(L ch) 及びセメント抵抗 R770(R ch) の3本の測定用端子のうちの両端の2本にデジタルボルトメーターを接続します。(レンジはDCに設定する。)
2. 電源スイッチをオンにし、アイドル電流が安定するまで、およそ10分間放置します。
3. P101基板上の半固定抵抗R769(L ch)と半固定抵抗R770(R ch) を時計回りにまわしデジタルボルトメーターの値が $10\text{mV} \pm 1\text{mV}$ (50mA)になるように調整します。

Measurement point



R769 / R770

7. ELECTRICAL PARTS LIST

ASSIGNMENT OF COMMON PARTS CODES.

RESISTORS

R*** : 1) GD05 × × × 140, Carbon film fixed resistor, ±5% 1/4W
 R*** : 2) GD05 × × × 160, Carbon film fixed resistor, ±5% 1/6W

Resistance value

Examples ;

Resistance value

0.1Ω 001	10Ω ... 100	1kΩ 102	100kΩ 104
0.5Ω 005	18Ω ... 180	2.7kΩ 272	680kΩ 684
1Ω 010	100Ω ... 101	10kΩ 103	1MΩ 105
6.8Ω 068	390Ω ... 391	22kΩ 223	4.7MΩ 475

Note : Please distinguish 1/4W from 1/6W by the shape of parts used actually.

CAPACITORS

C*** : CERAMIC CAP.

3) DD1 × × × × 370, Ceramic capacitor
 Disc type
 Temp.coef.P350 ~ N1000, 50V
 Capacity value
 Tolerance

Examples ;

Tolerance (Capacity deviation)

±0.25pF 0
 ±0.5pF 1
 ±5% 5

* Tolerance of COMMON PARTS handled here are as follows :

0.5pF ~ 5pF ... ±0.25pF
 6pF ~ 10pF ... ±0.5pF
 12pF ~ 560pF ... ±5%

Capacity value

0.5pF ... 005	3pF ... 030	100pF ... 101
1pF ... 010	10pF ... 100	220pF ... 221
1.5pF ... 015	47pF ... 470	560pF ... 561

C*** : CERAMIC CAP.

4) DK16 × × × 300, High dielectric constant ceramic capacitor
 Disc type
 Temp.chara. 2B4, 50V
 Capacity value

Examples ;

Capacity value

100pF ... 101	1000pF 102	10000pF ... 103
470pF ... 471	2200pF 222	

C*** : 5) ELECTROLY CAP. (⏏), 6) FILM CAP. (⏏)

5) EA × × × × × 10, Electrolytic capacitor
 One-way lead type, Tolerance ±20%

Working voltage
 Capacity value

Examples ;

Capacity value

0.1μF 104	4.7μF ... 475	100μF ... 107
0.33μF 334	10μF ... 106	330μF ... 337
1μF 105	22μF ... 226	1100μF ... 118
		2200μF ... 228

Working voltage

6.3V 006	25V ... 025
10V 010	35V ... 035
16V 016	50V ... 050

6) DF15 × × × 350 Plastic film capacitor
 DF15 × × × 310 One-way type, Mylar ±5% 50V
 DF16 × × × 310 Plastic film capacitor
 One-way type, Mylar ±10% 50V

Capacity value

Examples ;

Capacity value

0.001μF (1000pF) 102	0.1μF 104
0.0018μF 182	0.56μF 564
0.01μF 103	1μF 105
0.015μF 153	

NOTE : 1) The above CODES (R***, R***, C***, C*** and C***) are omitted on the schematic diagram in some case.
 2) On the occasion, be confirmed the common parts on the parts list.
 3) Refer to "Common Parts List" for the other common parts (R105, DD4, DK4).

NOTE ON SAFETY FOR FUSIBLE RESISTOR :

The suppliers and their type numbers of fusible resistors are as follows;

1. KOA Corporation

Part No. (MJI)	Type No. (KOA)	Description
NH05 × × × 140	RF25S × × × × ΩJ	(±5% 1/4W)
NH05 × × × 120	RF50S × × × × ΩJ	(±5% 1/2W)
NH85 × × × 110	RF73B2A × × × × ΩJ	(±5% 1/10W)
NH95 × × × 140	RF73B2E × × × × ΩJ	(±5% 1/4W)

* Resistance value Resistance value (0.1 – 10kΩ)

2. Matsushita Electronic Components Co., Ltd

Part No. (MJI)	Type No. (MEC)	Description
NF05 × × × 140	ERD-2FCJ × × ×	(±5% 1/4W)
RF05 × × × 140		
NF02 × × × 140	ERD-2FCG × × ×	(±2% 1/4W)
RF02 × × × 140		

* Resistance value * Resistance value

Examples ;

* Resistance value

0.1Ω 001	10Ω ... 100	1kΩ 102	100kΩ 104
0.5Ω 005	18Ω ... 180	2.7kΩ 272	680kΩ 684
1Ω 010	100Ω ... 101	10kΩ 103	1MΩ 105
6.8Ω 068	390Ω ... 391	22kΩ 223	4.7MΩ 475

ABBREVIATION AND MARKS

ANT. : ANTENNA	BATT. : BATTERY
CAP. : CAPACITOR	CER. : CERAMIC
CONN. : CONNECTING	DIG. : DIGITAL
HP : HEADPHONE	MIC. : MICROPHONE
μ-PRO : MICROPROCESSOR	REC. : RECORDING
RES. : RESISTOR	SPK : SPEAKER
SW : SWITCH	TRANSF. : TRANSFORMER
TRIM. : TRIMMING	TRS. : TRANSISTOR
VAR. : VARIABLE	X'TAL : CRYSTAL

NOTE ON SAFETY :

Symbol ⚡ Fire or electrical shock hazard. Only original parts should be used to replaced any part marked with symbol ⚡ . Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

安全上の注意 :

⚡ がついている部品は、安全上重要な部品です。必ず指定されている部品番号の部品を使用して下さい。

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)	POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
			P101-MAIN CIRCUIT BOARD						
			P101-CAPACITORS						
C301		482212614166	FILM 330pF J 100V	OF15331540	C814		482212441543	ELECT. 1μF M 50V	OA10505020
C302		482212614166	FILM 330pF J 100V	OF15331540	C815		482212490355	ELECT. 100μF M 50V RA-2	OA10705020
C303		996500001581	ELECT. 22μF M 25V RA-2	OA22602520					
C304		996500001581	ELECT. 22μF M 25V RA-2	OA22602520	C901		996500001344	FILM 100pF J 100V APSV	OF15101540
C305		482212441535	ELECT. 100μF M 25V RA-2	OA10702520	C902		996500001344	FILM 100pF J 100V APSV	OF15101540
C306		482212441535	ELECT. 100μF M 25V RA-2	OA10702520	C911		482212412276	FILM 0.01μF J 100V	OF15103540
C307		482212441534	ELECT. 10μF M 25V RA-2	OA10602520	C912		482212422698	ELECT. 47μF M 25V RA-2	OA47602520
C308		482212441534	ELECT. 10μF M 25V RA-2	OA10602520	C913		482212422698	ELECT. 47μF M 25V RA-2	OA47602520
C317					C915		482212240617	CER. 0.1μF +80-20% 50V	DD38104010
∫		482212230043	CER. 0.01μF Z 50V	DK18103310	C916		482212422273	ELECT. 0.47μF M 50V RA-2	OA47405020
C323					C917		482212230043	CER. 0.01μF Z 50V	DK18103310
C325								P101-CAPACITORS (COMMON)	
∫	/K, S	996500001344	FILM 100pF J 100V	OF15101540				PLASTIC FILM CAPACITOR	
C338								±5% 50V : C309-C312	
								C407-C410 C415 C416	
								C719-C722 C725 C726	
C401		482212110792	FILM 220pF J 100V	OF15221540				P101-RESISTORS	
C402		482212110792	FILM 220pF J 100V	OF15221540	▲ R328		482205210229	22Ω ±5% 1/6W	GG05220160
C403		482212441534	ELECT. 10μF M 25V RA-2	OA10602520	▲ R329		482205210229	22Ω ±5% 1/6W	GG05220160
C404		482212441534	ELECT. 10μF M 25V RA-2	OA10602520	▲ R330		482205210229	22Ω ±5% 1/6W	GG05220160
C405		482212490371	ELECT. 470μF M 10V RA-2	OA47701020	R331		482211131001	330Ω ±5% 1/6W	GG05331160
C406		482212490371	ELECT. 470μF M 10V RA-2	OA47701020	R332		482211131001	330Ω ±5% 1/6W	GG05331160
C411		482212170437	FILM 1000pF J 100V APSV	OF15102540	▲ R333		482205210229	22Ω ±5% 1/6W	GG05220160
C412		482212170437	FILM 1000pF J 100V APSV	OF15102540	R419		482211131001	330Ω ±5% 1/6W	GG05331160
C413		996500001581	ELECT. 22μF M 25V RA-2	OA22602520	R420		482211131001	330Ω ±5% 1/6W	GG05331160
C414		996500001581	ELECT. 22μF M 25V RA-2	OA22602520					
C417		482212490365	ELECT. 220μF M 25V RA-2	OA22702520	R707		482211120407	100Ω ±1% 1/4W	NR01101140
C418		482212490365	ELECT. 220μF M 25V RA-2	OA22702520	R708		482211120407	100Ω ±1% 1/4W	NR01101140
C419	/K, /S	996500001344	FILM 100pF J 100V	OF15101540	R723				
C420	/K, /S	996500001344	FILM 100pF J 100V	OF15101540	∫		482205310152	1.5kΩ ±5% 1W	GA05152010
C421		482212230043	CER. 0.01μF Z 50V	DK18103310	R726				
					R731				
C701		482212441534	ELECT. 10μF M 25V RA-2	OA10602520	∫		482205210471	470Ω ±5% 1/6W	GG05471160
C702		482212441534	ELECT. 10μF M 25V RA-2	OA10602520	R734				
C703		482212614166	FILM 330pF J 100V	OF15331540	R739				
C704		482212614166	FILM 330pF J 100V	OF15331540	∫		482205210151	150Ω ±5% 1/6W	GG05151160
C705		482212441535	ELECT. 100μF M 25V RA-2	OA10702520	R742				
C706		482212441535	ELECT. 100μF M 25V RA-2	OA10702520	R751		482210020681	TRIMM. 2.2kΩ RH0638CJ3R	RA02220780
C707					R752		482210020681	TRIMM. 2.2kΩ RH0638CJ3R	RA02220780
∫		482212490365	ELECT. 220μF M 25V RA-2	OA22702520	∫				
C710					R755		482205210101	100Ω ±5% 1/6W	GG05101160
C711		996500001564	FILM 680pF ±5% 100V OFC	OF55681540	R756				
C712		996500001564	FILM 680pF ±5% 100V OFC	OF55681540	R757		482205210102	1kΩ ±5% 1/6W	GG05102160
C713		482212441534	ELECT. 10μF M 25V RA-2	OA10602520	R758		482205210102	1kΩ ±5% 1/6W	GG05102160
C714		482212441534	ELECT. 10μF M 25V RA-2	OA10602520	R759				
C715					∫		482205210479	47Ω ±5% 1/6W	GG05470160
∫		482212490366	ELECT. 220μF M 50V RA-2	OA22705020	R762				
C718					R763				
C723		482212412276	FILM 0.01μF J 100V	OF15103540	∫		482205210109	10Ω ±5% 1/6W	GG05100160
C724		482212412276	FILM 0.01μF J 100V	OF15103540	R766				
C727		482212422273	ELECT. 0.47μF M 50V RA-2	OA47405020	R767		482205210221	220Ω ±5% 1/6W	GG05221160
C728		482212422273	ELECT. 0.47μF M 50V RA-2	OA47405020	R768		482205210221	220Ω ±5% 1/6W	GG05221160
C729		996500001561	MICA 10pF D 250WV AUDIO	DF31100520	▲ R769		482211191402	FIXED 0.1Ω X2 3W	BZ10102010
C730		996500001561	MICA 10pF D 250WV AUDIO	DF31100520	▲ R770		482211191402	FIXED 0.1Ω X2 3W	BZ10102010
					R771		482205210102	1kΩ ±5% 1/6W	GG05102160
▲ C801			ELECT. 10000μF 50V AUDIO	OB10905030	R772		482205210102	1kΩ ±5% 1/6W	GG05102160
▲ C802			ELECT. 10000μF 50V AUDIO	OB10905030	R773			4.7kΩ ±5% 1/6W	GG05472160
C803		482212423918	ELECT. ELNA RA2 16X25	OA10805020	R774			4.7kΩ ±5% 1/6W	GG05472160
C804		482212423918	ELECT. ELNA RA2 16X25	OA10805020	R777		482205310109	10Ω ±5% 1W	GA05100010
C805		482212441535	ELECT. 100μF M 25V RA-2	OA10702520	R778		482205310109	10Ω ±5% 1W	GA05100010
C806		482212441535	ELECT. 100μF M 25V RA-2	OA10702520					
C807		482212490365	ELECT. 220μF M 25V RA-2	OA22702520	R785				
C808		482212490365	ELECT. 220μF M 25V RA-2	OA22702520	∫		482205210109	10Ω ±5% 1/4W	GG05100140
C809		482212490366	ELECT. 220μF M 50V RA-2	OA22705020	R788				
C810		482212422698	ELECT. 47μF M 50V RA-2	OA47602520	R789		482211660494	330Ω ±5% 2W METAL	NK05331020
C811		482212441535	ELECT. 100μF M 50V RA-2	OA10702520	R790		482211660494	330Ω ±5% 2W METAL	NK05331020
C812		482212441534	ELECT. 10μF M 50V RA-2	OA10602520	R791		482205021022	1kΩ ±5% 1/2W	GG05102120
C813		482212441543	ELECT. 1μF M 50V	OA10505020	R792		482205022262	2.2kΩ ±5% 1/4W	GG05222140

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)	POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
R801		482205021108	1Ω ±5% 1/2W	GG05010120	Q702		482220973064	IC NJM-2068-DD	HC10053090
R802		482205021108	1Ω ±5% 1/2W	GG05010120	Q703		482213060107	TRS. 2SA1048 Y OR GR	HT110482B0
R809		482205210478	4.7Ω ±5% 1/6W	GG05047160	Q704		482213060107	TRS. 2SA1048 Y OR GR	HT110482B0
R810		482205210478	4.7Ω ±5% 1/6W	GG05047160	Q705		482213060839	TRS. 2SC2458 Y OR GR	HT324582B0
R812		482205210229	22Ω ±5% 1/6W	GG05220160	Q706		482213060839	TRS. 2SC2458 Y OR GR	HT324582B0
▲ R815		482205210228	2.2Ω ±5% 1/6W	GG05022160	Q707		482213043233	TRS. 2SC2240 GR OR BL	HT322402A0
R908		482205022262	2.2kΩ ±5% 1/4W	GG05222140	Q708		482213043233	TRS. 2SC2240 GR OR BL	HT322402A0
R***			P101-RESISTORS (COMMON)		Q709				
			CARBON FILM FIXED RES.		}		482213042949	TRS. 2SA970 GR OR BL	HT109702A0
			±5% 1/6W : R301-R327		Q712				
			R401-R418 R701-R730		Q713		482213043233	TRS. 2SC2240 GR OR BL	HT322402A0
			R735-R738 R743-R750 R775		Q714		482213043233	TRS. 2SC2240 GR OR BL	HT322402A0
			R776 R779-R784 R803-R808		Q715		482213042949	TRS. 2SA970 GR OR BL	HT109702A0
			R813 R814 R901-R907		Q716		482213042949	TRS. 2SA970 GR OR BL	HT109702A0
			R910-R921		Q717		482213043233	TRS. 2SC2240 GR OR BL	HT322402A0
					Q718		482213043233	TRS. 2SC2240 GR OR BL	HT322402A0
					Q719		482213060526	TRS. 2SD1508 DARLINGTON HFE>4000	HT415080A0
D301		482213032362	DIODE 1SS176 MA165 1SS254 30V 0.1A	HD20002000	Q720		482213060526	TRS. 2SD1508 DARLINGTON HFE>4000	HT415080A0
D302		482213032362	DIODE 1SS176 MA165 1SS254 30V 0.1A	HD20002000	Q721		482213043283	TRS. 2SC2705 O OR Y	HT327052A0
D701					Q722		482213043283	TRS. 2SC2705 O OR Y	HT327052A0
}		482213080322	ZENER DIODE 15V	HD31501000	Q723		482213042999	TRS. 2SA1145 O OR Y	HT111452A0
D704					Q724		482213042999	TRS. 2SA1145 O OR Y	HT111452A0
D705					Q725		532213061737	TRS. 2SC3423 O OR Y	HT334232A0
}		482213032362	DIODE 1SS176 MA165 1SS254 30V 0.1A	HD20002000	Q726		532213061737	TRS. 2SC3423 O OR Y	HT334232A0
D712					Q727		532213061728	TRS. 2SA1360 O OR Y	HT113602A0
D713		482213010667	ZENER DIODE 4.7 V	HD30471000	Q728		532213061728	TRS. 2SA1360 O OR Y	HT113602A0
D714		482213010667	ZENER DIODE 4.7 V	HD30471000	Q729		482213043296	TRS. 2SC2837 R OR O	HT328372A0
D715		482213033948	ZENER DIODE 5.6V	HD30561000	Q730		482213043296	TRS. 2SC2837 R OR O	HT328372A0
D716		482213033948	ZENER DIODE 5.6V	HD30561000	Q731		482213043008	TRS. 2SA1186 R OR O	HT111862A0
D717					Q732		482213043008	TRS. 2SA1186 R OR O	HT111862A0
}		482213080837	DIODE HSS81TD 150V 150MA	HD20027010	Q733		482213043233	TRS. 2SC2240 GR OR BL	HT322402A0
D722					Q734		482213043233	TRS. 2SC2240 GR OR BL	HT322402A0
D723		482213031554	ZENER DIODE 4.3V	HD30431000	Q735		482213042949	TRS. 2SA970 GR OR BL	HT109702A0
D724		482213031554	ZENER DIODE 4.3V	HD30431000	Q736		482213042949	TRS. 2SA970 GR OR BL	HT109702A0
D725		482213032362	DIODE 1SS176 MA165 1SS254 30V 0.1A	HD20002000	Q801			TRS. 2SD1415	HT41415100
D726		482213032362	DIODE 1SS176 MA165 1SS254 30V 0.1A	HD20002000	Q802			TRS. 2SB1020	HT21020100
D727		482213080837	DIODE HSS81TD 150V 150MA	HD20027010	Q803		482213060107	TRS. 2SA1048 Y OR GR	HT110482B0
D728		482213080837	DIODE HSS81TD 150V 150MA	HD20027010	Q804		482213060839	TRS. 2SC2458 Y OR GR	HT324582B0
▲ D801			DIODE FRH10A15	HE10004100	▲ Q805		482220962423	IC NJM78M06FA	HC38506090
▲ D802			DIODE FCH10A15	HE10003100	▲ Q806		482213060107	TRS. 2SA1048 Y OR GR	HT110482B0
▲ D803					Q901		482220983312	IC TA7317P	HC10042050
}		482213082421	DIODE 1D3 1A 250V	HD20002710	Q902				
▲ D810					J301		482229061242	P101-MISCELLANEOUS	
D811		482213032362	DIODE 1SS176 MA165 1SS254 30V 0.1A	HD20002000	J302			TERMINAL 14X14 RA 2L2P	YT02021360
D812		482213032362	DIODE 1SS176 MA165 1SS254 30V 0.1A	HD20002000	J303			BLK AU FLM-GND	
D813		482213082474	ZENER DIODE 20V	HD32001000	J304			TERMINAL YKC21-3077	YT02041110
D814		482213082474	ZENER DIODE 20V AENER	HD32001000	J401			TERMINAL YKC21-3077	YT02041110
▲ D815					J901			TERMINAL 14X14 RA 2L2P	YT02021230
}		482213082421	DIODE 1D3 1A 250V	HD20002710	J902		482226741009	BLK NI FLM-GND	
▲ D822								TERMINAL 14X14 RA 2L2P	YT02021230
D823		482213034488	ZENER DIODE 11V	HD31101000	L701			BLK NI FLM-GND	
D901		482213032362	DIODE 1SS176 MA165 1SS254 30V 0.1A	HD20002000	L702		996500001576	TERMINAL 2P RCA PIN JACK	YT02020890
D902		482213032362	DIODE 1SS176 MA165 1SS254 30V 0.1A	HD20002000	L901		996500001576		
Q301		482220973064	IC NJM-2068-DD	HC10053090	S701		482227620519	RELAY G5PA-28 5A 250VAC	LY20240490
Q302		482220932553	IC LC78212	HC10309030	S901			RELAY MR82-24USR	LY20240480
Q303		482220932553	IC LC78212	HC10309030				RELAY MR82-24USR	LY20240480
Q401		482220973064	IC NJM-2068-DD	HC10053090	C201		482212240617		
Q701		482220973064	IC NJM-2068-DD	HC10053090	C202		996500001569	P201-LED &TONE CIRCUIT BOARD	
								P201-CAPACITORS	
								CER. 0.1μF +80-20% 50V	DD38104010
								CER. 0.01μF DC50V +80%-20%	DD38103010

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C203		482212490352	ELECT. 10μF M 16V RA-2	OA10601620	C***			P251-CAPACITORS (COMMON) PLASTIC FILM CAPACITOR ±5% 50V : C605-C610	
C204		482212490352	ELECT. 10μF M 16V RA-2	OA10601620					
C205		482212240617	CER. 0.1μF +80-20% 50V	DD38104010					
C206		482212490406	BIG ELECT FMOH223ZTP16 SUPER CAP.	EX22300530					
C207		482212490352	ELECT. 10μF M 16V RA-2	OA10601620					
C208		996500001569	CER. 0.01μF DC50V +80%-20%	DD38103010	R263		482205210101	P251-RESISTORS 100Ω ±5% 1/6W	GG05101160
C209		482212412276	FILM 0.01μF J 100V	OF15103540	R265		482205210101	100Ω ±5% 1/6W	GG05101160
C210		482212412276	FILM 0.01μF J 100V	OF15103540	▲ R623		482211131001	330Ω ±5% 1/6W	GG05331160
					▲ R624		482211131001	330Ω ±5% 1/6W	GG05331160
R230		482205210228	P201-RESISTOR 2.2Ω ±5% 1/6W	GG05022160	R625			VARIABLE 10k(B)X2 RK14K124	RM01030990
					R626			VARIABLE 10k(B)X2 RK14K124	RM01030990
					R627			VARIABLE 20k(MN)X2	RM02030570
R***			P201-RESISTORS (COMMON) CARBON FILM FIXED RES. ±5% 1/6W : R201-R210 R212 R214-R229		R***			P251-RESISTORS (COMMON) CARBON FILM FIXED RES. ±5% 1/6W : R251-R262 R264 R266-R271 R601-R622	
D201		482213032362	P201-SEMICONDUCTORS DIODE 1SS176 MA165 1SS254 30V 0.1A	HD20002000				P251-SEMICONDUCTORS	
▲ D202		482213082421	DIODE 1D3 1A 250V	HD20002710	D251			L.E.D. HLMF-K200 RED	HI10005340
▲ D203		482213082421	DIODE 1D3 1A 250V	HD20002710	∫				
D204		482213032362	DIODE 1SS176 MA165 1SS254 30V 0.1A	HD20002000	D257			L.E.D. SELU1E50CM-S BLUE	HI10039080
D206					D258			DIODE 1SS176 MA165 1SS254	HD20002000
∫					D259		482213032362	30V 0.1A	
D209		482213032362	DIODE 1SS176 MA165 1SS254 30V 0.1A	HD20002000	Q251		482220916735	PHOTO UNIT PNA4655M00HB IR SENSOR	HW10006020
Q201			MICROPROCESSOR TMP87CH46N-B0024 8BIT	HU319JT000	Q252		482213060107	TRS. 2SA1048 Y OR GR	HT110482B0
Q202		482220973287	IC LB1630	HC10235030	Q253		482213060839	TRS. 2SC2458 Y OR GR	HT324582B0
Q203		482213060839	TRS. 2SC2458 Y OR GR	HT324582B0	Q601		482220973064	IC NJM-2068-DD	HC10053090
Q204		482213060839	TRS. 2SC2458 Y OR GR	HT324582B0	Q602		482220973064	IC NJM-2068-DD	HC10053090
Q205		482213060839	TRS. 2SC2458 Y OR GR	HT324582B0				P251-MISCELLANEOUS	
Q206		482213060588	DIG.TRS. DTC114ES UN4211 10K 10K	BA20001000	S251			ROTARY SWITCH SRBV17-F0020-11	SR01070050
Q207		482213060107	TRS. 2SA1048 Y OR GR	HT110482B0				P291-INPUT SELECTOR	
Q208		482213061227	DIG.TRS. DTA114E AN4111 10K 10K	BA10001000				CIRCUIT BOARD	
Q209		482213061227	DIG.TRS. DTA114ES UN4111 10K 10K	BA10001000	C291		996500001569	CER. 0.01μF DC50V +80%-20%	DD38103010
Q210		482213060588	DIG.TRS. DTC114ES UN4211 10K 10K	BA20001000	C292		996500001569	CER. 0.01μF DC50V +80%-20%	DD38103010
					S291		482227320368	ROTARY SWITCH SRRSIC	SR01120070
L201		482215860605	P201-MISCELLANEOUS FERRITE CORE	FC90050060				P501-VOLUME AMP	
X201		482224272066	FERRIT BEADS (B-01-RT) SERAMIC VIB. CST8.0MHZ (MT)	FQ08004010				CIRCUIT BOARD	
								P501-CAPACITORS	
C251		996500001318	ELECT. 220μF M 10V RA-2	OA22701020	C503		482212170437	FILM 1000pF J 100V APSV	OF15102540
C252		996500001569	CER. 0.01μF DC50V +80%-20%	DD38103010	C504		482212170437	FILM 1000pF J 100V APSV	OF15102540
C253		996500001318	ELECT. 220μF M 10V RA-2	OA22701020	C505		482212441534	ELECT. 10μF M 25V RA-2	OA10602520
C254		482212490352	ELECT. 10μF M 16V RA-2	OA10601620	C506		482212441534	ELECT. 10μF M 25V RA-2	OA10602520
					C507		482212110792	FILM 220pF J 100V	OF15221540
C601		482212441534	ELECT. 10μF M 25V RA-2	OA10602520	C508		482212110792	FILM 220pF J 100V	OF15221540
C602		482212441534	ELECT. 10μF M 25V RA-2	OA10602520	C509		996500001344	FILM 100pF J 100V APSV	OF15101540
C603		996500001581	ELECT. 22μF M 25V RA-2	OA22602520	C510		996500001344	FILM 100pF J 100V APSV	OF15101540
C604		996500001581	ELECT. 22μF M 25V RA-2	OA22602520	C511		996500001581	ELECT. 22μF M 25V RA-2	OA22602520
C611		482212441534	ELECT. 10μF M 25V RA-2	OA10602520	C512		996500001581	ELECT. 22μF M 25V RA-2	OA22602520
C612		482212441534	ELECT. 10μF M 25V RA-2	OA10602520	C513				
C613		996500001581	ELECT. 22μF M 25V RA-2	OA22602520	∫		482212490365	ELECT. 220μF M 25V RA-2	OA22702520
C614		996500001581	ELECT. 22μF M 25V RA-2	OA22602520	C516				
C615		482212490365	ELECT. 220μF M 25V RA-2	OA22702520	C517		482212441534	ELECT. 10μF M 25V RA-2	OA10602520
C616		482212490365	ELECT. 220μF M 25V RA-2	OA22702520	C518		482212441534	ELECT. 10μF M 25V RA-2	OA10602520
C617		482212231205	CER. 47pF J CH 50V	DD15470300	C519		996500001561	MICA 10pF D 250WV AUDIO	DF31100520
C618		482212231205	CER. 47pF J CH 50V	DD15470300	C520		996500001561	MICA 10pF D 250WV AUDIO	DF31100520
					C***			P501-CAPACITORS (COMMON) PLASTIC FILM CAPACITOR ±5% 50V : C501 C502	

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
▲ R549 }		482211131001	PB04-RESISTORS 330Ω ±5% 1/6W	GG05331160
▲ R552 R553 R554		482205210122	1.2kΩ ±5% 1/6W VARIABLE RESIST 30K(B)X2 RK16312MC	GG05122160 RM03030570
R***			P501-RESISTORS (COMMON) CARBON FILM FIXED RES. ±5% 1/6W : R501-R510 R513-R548 R555-R557	
			PB04-SEMICONDUCTORS	
D501 }		482213032362	DIODE 1SS176 MA165 1SS254 30V 0.1A	HD20002000
D506 D507 D508		482212441543 482213032362	ELECT. 1μF M 50V RA-2 DIODE 1SS176 MA165 1SS254 30V 0.1A	OA10505020 HD20002000
Q501 Q502 Q503 Q504 Q505 }		482220973064 482220973064 482213060107 482213060107 482213060839	IC NJM-2068-DD IC NJM-2068-DD TRS. 2SA1048 Y OR GR TRS. 2SA1048 Y OR GR TRS. 2SC2458 Y OR GR	HC10053090 HC10053090 HT110482B0 HT110482B0 HT324582B0
Q508 Q509 }		482213060107	TRS. 2SA1048 Y OR GR	HT110482B0
Q512 Q513 Q514 Q515 Q516 Q517 Q518 Q519		482213060839 482213060839 482213043233 482213043233 482213042949 482213042949 482213060107	TRS. 2SC2458 Y OR GR TRS. 2SC2458 Y OR GR TRS. 2SC2240 GR OR BL TRS. 2SC2240 GR OR BL TRS. 2SA970 GR OR BL TRS. 2SA970 GR OR BL TRS. 2SA1048 Y OR GR	HT324582B0 HT324582B0 HT322402A0 HT322402A0 HT109702A0 HT109702A0 HT110482B0
L501 S501		996500001576 482227613449	PB04-MISCELLANEOUS RELAY MR82-24USR PUSH SWITCH SPUN12	LY20240480 SP02012090
F851	/F		P851-AC OUTLET VOL.SEL. CIRCUIT BOARD FUSE 6.3A 125V UL CSA MITI TYPE FBT	FS10630350
F851 F852	/K, /S /K	482207033152 482207033152	FUSE 3.15 A 250V BS LISTED FUSE 3.15 A 250V BS LISTED	FS10315850 FS10315850
▲ J851 S851	/F /K	482226531113 482227721825	JACK 3P ACOUTLET SLIDE SWITCH SDKGA4	YJ04001950 SS02021510
▲ C891 ▲ S891		482212143732 482227612647	P891-POWER SW. CIRCUIT BOARD FILM 0.01μF 250V AC PUSH SW. ESB-99753V-4 TV-8	DF77103500 SP01011470
C951 C951 C952 C952 R951 R952 J951	/K /S /K /S	482212412276 482212412276 482212412276 482212412276 482205210109 482205210109 996500001662	P951-HEAD PHONE CIRCUIT BOARD FILM 0.01μF J 100V FILM 0.01μF J 100V FILM 0.01μF J 100V FILM 0.01μF J 100V RESISTOR 10Ω ±5% 1/6W RESISTOR 10Ω ±5% 1/6W JACK HEADPHONE HLJ0540-01-410 BLK	OF15103540 OF15103540 OF15103540 OF15103540 GG05100160 GG05100160 YJ01003870